

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-20 (canceled)

Claim 21. (Previously presented) A drive circuit for a switch of a switching converter which generates an output voltage from an input voltage, the drive circuit comprising:

a first input terminal configured to receive an output voltage signal, the output voltage signal representative of the output voltage of the switching converter,

a controller arrangement having at least one control amplifier and at least one energy storage element coupled to the at least one control amplifier, the controller arrangement operable to receive the output voltage signal and generate a control signal based at least in part on the output voltage signal,

a protection circuit operable to detect at least one critical state of the switching converter, the protection circuit further operable to generate a protection signal dependent on the detection of at least one critical state, the protection circuit further comprising a discharge circuit coupled to the at least one storage element,

a signal generating circuit operably coupled to receive the control signal and the protection signal, the signal generating circuit operable to generate a drive signal based at least in part on the control signal, the signal generating circuit operable to provide the drive signal as an output dependent on the protection signal.

Claim 22. (Previously presented) The drive circuit as claimed in claim 21, wherein the at least one energy storage element is coupled to an output of at least one control amplifier.

Claim 23. (Previously presented) The drive circuit as claimed in claim 21, wherein the at least one energy storage element includes a capacitor.

Claim 24. (Previously presented) The drive circuit as claimed in claim 21, wherein the discharge circuit is configured to discharge the at least one energy storage element upon the detection of at least one critical state.

Claim 25. (Previously presented) The drive circuit as claimed in claim 21, wherein the discharge circuit includes a switch connected between the at least one energy storage element and a reference-ground potential, the switch selectively closed responsive to detection of at least one critical state by the control circuit.

Claim 26. (Previously presented) The drive circuit as claimed in claim 21, wherein the discharge circuit is operably connected to detect a discharge state of the at least one energy storage element, the discharge circuit further operable to generate a discharge signal dependent at least in part on the discharge state.

Claim 27. (Previously presented) The drive circuit as claimed in claim 26, wherein the discharge circuit includes a current measuring circuit operable to detect the discharge state by detecting a discharge current of the at least one energy storage element, the current measuring circuit further operable to generate the discharge signal in a manner dependent on an amplitude of the discharge current.

Claim 28. (Previously presented) The drive circuit as claimed in claim 27, wherein the discharge circuit is configured to generate the discharge signal in a manner dependent on a comparison of the discharge current to a reference current.

Claim 29. (Previously presented) The drive circuit as claimed in claim 26, wherein the protection circuit generates the protection signal in a manner dependent on the discharge signal.

Claim 30. (Previously presented) The drive circuit as claimed in claim 21, wherein the protection circuit is further operable to receive the output voltage signal, and the protection circuit is further operable to detect a first critical state if the output voltage signal is less than a first threshold value.

Claim 31. (Previously presented) The drive circuit as claimed in claim 30, wherein the protection circuit is further operable to:

detect if the output voltage signal exceeds a second threshold, the second threshold value greater than the first threshold value; and

after detection that the output voltage signal exceeds the second threshold, detect the first critical state if the output voltage signal falls below the first threshold value.

Claim 32. (Previously presented) The drive circuit as claimed in claim 30, wherein the protection circuit is further operable to detect a second critical state if the output voltage signal falls below a second threshold, the second threshold being less than the first threshold.

Claim 33. (Previously presented) The drive circuit as claimed in claim 21, further comprising a connecting terminal configured to receive a supply potential, the protection circuit operably coupled to the connecting terminal, and wherein the protection circuit is operable to detecting a first critical state if the supply potential falls below a predetermined threshold value.

Claim 34. (Previously presented) The drive circuit as claimed in claim 21, further comprising an input terminal for receiving an input current signal, the input current signal corresponding to an input current of the switching converter, and wherein the signal

generating circuit is further operable to generate the drive signal based at least in part on the control signal and at least in part on the input current signal.

Claim 35. (Previously presented) The drive circuit as claimed in claim 21, the signal generating circuit is operable to inhibit output of a drive signal if the protection signal has a predetermined level.

Claim 36. (Previously presented) A switching converter comprising:

- an input rectifier configured to receive and AC input signal;
- a coil connected to the input rectifier;
- a switch connected between the coil and a reference potential, the switch having a control input;
- an output operable to generate an output voltage of the switching converter;
- a rectifier device connected between the switch and the output;
- a drive circuit operably coupled to provide a drive signal to the control input of the switch, the driver circuit comprising,
 - a first input terminal configured to receive an output voltage signal, the output voltage signal representative of the output voltage,
 - a controller arrangement having at least one control amplifier and at least one energy storage element coupled to the at least one control amplifier, the controller arrangement operable to receive the output voltage signal and generate a control signal based at least in part on the output voltage signal,

a protection circuit operable to detect at least one critical state of the switching converter, the protection circuit further operable to generate a protection signal dependent on the detection of at least one critical state, the protection circuit further comprising a discharge circuit coupled to the at least one storage element,

a signal generating circuit operably coupled to receive the control signal and the protection signal, the signal generating circuit operable to generate the drive signal based at least in part on the control signal, the signal generating circuit operable to provide the drive signal as an output dependent on the protection signal.

Claim 37. (Currently amended) A method for driving a switch connected to a rectifier arrangement in a switching converter which provides an output voltage from an input voltage, the method comprising the following method steps:

a) providing an output voltage signal that corresponds to an output voltage of the switching converter;

b) generating a control signal based on the output voltage signal using a circuit that includes at least one energy storage device, and generating drive pulses based at least in part on the control signal;

c)[[b)]] monitoring for at least one critical state of the switching converter based on the output voltage signal;

d)[[c)]] interrupting the [[a]]generation of drive pulses if a critical state is detected; and

e)[[d)]] at least partially discharging the at least one energy storage device ~~in a drive circuit of the switching converter~~ upon interrupting the generation of drive pulses.

38. (Currently amended) The method as claimed in claim 37, wherein step e)[[d)]] further comprises:

f)[[e)]] detecting a discharge current; and

g)[[f)]] discharging the at least one energy storage until the discharge current falls below a predetermined threshold.

39. (Currently amended) The method as claimed in claim 37, wherein step c)[[b)]] further comprises detecting a first critical state if the output voltage signal is less than a first threshold value.

40. (Currently amended) The method as claimed in claim 39, wherein step c)[[b)]] further comprises detecting a second critical state if the output voltage signal falls below a second threshold, the second threshold less than the first threshold.

41. (Previously presented) The method as claimed in claim 37, further comprising: detecting a critical state if a supply potential falls below a predetermined threshold.